

REMARKS

Claims 2-4, 6, 9-11, and 13 remain pending in this application for which applicants seek reconsideration.

Amendment

Claims 2, 4, 6, 9, 11, and 13 have been amended. Specifically, independent claims 2 and 9 have been amended to define that the controller or the control step, in the case where the image formation in the second mode is switched to the image formation in the first mode while the image formation is being carried out in the second mode, causes the scanners not being used for the image formation in the second mode to start preparation for the image formation in the first mode. Dependent claims 2, 6, 11, and 13 have been amended to reflect the changes made to their parent claims. No new matter has been introduced.

Art Rejection

Claims 2, 3, 9, and 10 were rejected under 35 U.S.C. § 102(b) as anticipated by Arai (USPGP 2002/0080220). Claims 4 and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Arai in view of Gomi (USP 6,314,251). Lastly, claims 6 and 13 were rejected under § 103(a) as unpatentable over Arai in view of Oda (USP 6,094,208).

Arai discloses a multicolor image forming apparatus where an image forming member is press-contacted with an intermediate transfer member in a waiting condition in accordance with an image formation mode that users frequently selects. Specifically, Arai's multicolor image forming apparatus comprises image forming units 4Y, 4M, 4C, 4K having each having a respective exposure device 43Y, 43M, 43C, 43K and a respective polygon 434Y, 434M, 434C, 434K. The polygons for the full color print mode are started under the timing shown in FIG. 4(a), where the polygon 434Y is started first, the polygon 434M is started second after a prescribed time ΔT , the polygon 434C is started third after the prescribed time ΔT , and the polygon 434K is started fourth after the prescribed time ΔT .

At the start of a full color image mode, the polygon 434Y is first started, and after a rise time of $t1-t2$, the polygon 434Y reaches a constant rotation speed. After the polygon 434 reaches the constant rotation speed, the Y laser representing the laser light source of the exposure device 43Y for the Y color image is driven at the time $t3$ to perform the writing of the Y color image. The M laser, C laser, and K laser are driven in the same manner as the Y laser, to perform the writings of the M image, C image, and K image.

In the case of a black and white mode as shown in FIG. 4(b), the polygons are started in the order of 434K, 434Y, 434M and 434C. That is, the polygon 434K is started first instead of the polygon 434Y. In the black and white mode, the polygon 434K is started at the time of t_1 , and after the rise time of t_1 - t_2 , it reaches a constant rotation speed. The laser light source of the exposure device 43K for the K color image is driven to perform the writing after the polygon 434K reaches a constant rotation speed. The first started polygon (434K or 434Y) reaches a constant rotation speed after the rise time of t_1 - t_2 , and the laser light source is driven thereafter to perform the writing.

At the start of a continuous printing process forming a plurality of images, the controller 100 selects the starting control shown in FIG. 4 (a) and FIG. 4 (b), depending on whether the first image is a full color mode or a black and white mode. When the first image is in a full color mode, FIG. 4 (a) is selected, and when it is in a black and white mode, FIG. 4 (b) is selected. The reason why the polygons 434Y, 434M, and 434C are started in the black and white mode is to form a ready-to-write condition for the polygons other than the polygon 434K, for preparing for the possibility that a color image will be formed after a black and white image, or on the next but one occasion, even if the first image is black and white.

Arai starts all the polygons to form a ready-to-write condition, regardless whether the first image is in a full color mode or a black and white mode. The only difference between the black and white printing process and the color image printing process in Arai is the order of starting the polygons. Arai thus would not have disclosed or taught start preparing the scanners not being used for the image formation in the second mode for the image formation in the first mode when the image formation in the second mode is switched to the image formation in the first mode while the image formation is being carried out in the second mode.

Gomi discloses a tandem type image forming apparatus for dealing with a smeared image generated in photosensitive members of image forming sections of the colors other than black during the monochromatic mode, and excessively worn photosensitive members. Specifically, Gomi discloses rotating or driving magnetic brush chargers for yellow, cyan, and magenta image forming sections even while printing in a monochromatic mode to remove the paper dust or HNO adhering to the surfaces of the photosensitive drums. Further, Gomi discloses that the rotation amounts of the other color chargers during the monochromatic mode are preferably variable in accordance with the image forming amount, because the wearing of the charge injecting layer of the photosensitive drums is accelerated when the mixing amount of mixing the transfer residual toner in the magnetic particles increases.

Oda discloses a color image forming apparatus to solve the problems of the life, noise, and power consumption of motors, and to reduce the time before the first copy. Specifically, Oda discloses keeping a polygon mirror 82d for recording black color component, which is used more frequently, in a waiting mode with its speed of rotation at the predetermined rate while polygon mirrors 82a, 82b and 82c for a full color mode are kept in a waiting mode, where they are usually stopped. Oda further discloses that when the polygon mirrors are synchronized with each other in the color mode, from the state in which polygon mirror 82d for recording black color component is kept at the predetermined speed of rotation, it is possible to correct the time lags of the signals from BDs 88a, 88b, and 88c, based on the signal from BD 88d for black recording, which has been already rotating at the stabilized speed, to quickly raise and stabilize the drives of the other polygon mirrors to the highly precise, synchronized state.

Applicants submit that neither Gomi nor Oda would have alleviated Arai's shortcoming noted above. Accordingly, even if these references were deemed properly combinable with Arai for argument's sake, applicants submit that the combination would not have disclosed or taught the claimed invention.

Conclusion

Applicants submit that this application is in condition for allowance. Should the examiner have any issues concerning this reply or any other outstanding issues remaining in this application, applicants urge the examiner to contact the undersigned to expedite prosecution.

Respectfully submitted,

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DATE

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REG. NO. 34,079 (RULE 34, WHERE APPLICABLE)

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